



Water - Essential for Life

Sturgis Water Works

Water Quality Report for year 2014

P.O. Box 98
Sturgis, KY 42459

Meetings: Sturgis City Hall 106 W 6th Street
Meeting Dates and Time: 1st Monday of Each Month 6:00pm

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This report is designed to inform the public about the quality of water and services provided on a daily basis. Our commitment is to provide our customers with a safe, clean, and reliable supply of drinking water. We want to assure that we will continue to monitor, improve, and protect the water system and deliver a high quality product. Water is the most indispensable product in every home and we ask everyone to be conservative and help us in our efforts to protect the water source and the water system.

Sturgis Water Works treats surface water from the Ohio River and purchases some water from Union County Water District. Union County purchases water from Morganfield whose source is the Ohio River. Activities and land uses upstream of Morganfield's source of water can pose potential risks to your drinking water. These activities, and how they are conducted, are of interest to the entire community because they potentially affect your health and the cost of treating your water. Activities immediately upstream of your water supply intake are of special concern because they provide little response time to the water system operators. An analysis of the Ohio River surface water supply to contamination indicates that its susceptibility is generally moderate. However, there are a few areas of high concern. Potential contaminant sources of concern include bridges, railway lines, row crops, forest, woodlands and roads. Each of these is rated as high in the susceptibility analysis because of the contaminant type, their proximity to the intake and chance of release. This complete source water assessment for both water treatment plants are available for review at the Green River Area Development District. Their office is located at 300 GRADD Way, Owensboro, KY 42301.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects may be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and may pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include: Microbial contaminants, such as viruses and bacteria, (sewage plants, septic systems, livestock operations, or wildlife). Inorganic contaminants, such as salts and metals, (naturally occurring or from stormwater runoff, wastewater discharges, oil and gas production, mining, or farming). Pesticides and herbicides, (stormwater runoff, agriculture or residential uses). Organic chemical contaminants, including synthetic and volatile organic chemicals, (by-products of industrial processes and petroleum production, or from gas stations, stormwater runoff, or septic systems). Radioactive contaminants, (naturally occurring or from oil and gas production or mining activities).

In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water to provide the same protection for public health.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Some or all of these definitions may be found in this report:

Information About Lead:

Maximum Contaminant Level (MCL) - the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG) - the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Maximum Residual Disinfectant Level (MRDL) - the highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG) - the level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Below Detection Levels (BDL) - laboratory analysis indicates that the contaminant is not present.

Not Applicable (N/A) - does not apply.

Parts per million (ppm) - or milligrams per liter, (mg/l). One part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) - or micrograms per liter, (µg/L). One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Parts per trillion (ppt) - one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.

Parts per quadrillion (ppq) - one part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in \$10,000,000,000,000.

Picocuries per liter (pCi/L) - a measure of the radioactivity in water.

Millirems per year (mrem/yr) - measure of radiation absorbed by the body.

Million Fibers per Liter (MFL) - a measure of the presence of asbestos fibers that are longer than 10 micrometers.

Nephelometric Turbidity Unit (NTU) - a measure of the clarity of water. Turbidity has no health effects. However, turbidity can provide a medium for microbial growth. Turbidity is monitored because it is a good indicator of the effectiveness of the filtration system.

Variances & Exemptions (V&E) - State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

Action Level (AL) - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system shall follow.

Treatment Technique (TT) - a required process intended to reduce the level of a contaminant in drinking water.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Your local public water system is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

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Kentucky Rural Water Association

The data presented in this report are from the most recent testing done in accordance with administrative regulations in 401 KAR Chapter 8. As authorized and approved by EPA, the State has reduced monitoring requirements for certain contaminants to less often than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data in this table, though representative, may be more than one year old.								
A = Sturgis Water Works B = Morganfield Water Works								
	Allowable Levels	Source	Highest Single Measurement	Lowest Monthly %	Violation	Likely Source of Turbidity		
Turbidity (NTU) TT * Representative samples of filtered water	No more than 1 NTU* Less than 0.3 NTU in 95% monthly samples	A= B=	0.1 0.89	100 98	No No	Soil runoff		
Regulated Contaminant Test Results								
Contaminant [code] (units)	MCL	MCLG	Source	Report Level	Range of Detection	Date of Sample	Violation	Likely Source of Contamination
Total Coliform Bacteria # or % positive samples	1	0	A=	2	N/A	2014	Yes	Naturally present in the environment
Alpha emitters [4000] (pCi/L)	15	0	B=	0.41	0.41 to 0.41	Aug-10	No	Erosion of natural deposits
Combined radium (pCi/L)	5	0	A= B=	1.5 0.93	1.5 to 0.93 to 0.93	Feb-14 Aug-10	No No	Erosion of natural deposits
Uranium (µg/L)	30	0	B=	0.56	0.56 to 0.56	Aug-10	No	Erosion of natural deposits
Inorganic Contaminants								
Arsenic [1005] (ppb)	10	N/A	A=	1.6	1.6 to 1.6	Nov-14	No	Natural erosion; runoff from orchards or glass and electronics production wastes
Barium [1010] (ppm)	2	2	A= B=	0.041 0.037	0.041 to 0.037 to 0.037	Nov-14 Oct-14	No No	Drilling wastes; metal refineries; erosion of natural deposits
Copper [1022] (ppm) sites exceeding action level 0	AL = 1.3	1.3	A=	0.131 (90 th percentile)	0.0051 to 0.356	Jul-14	No	Corrosion of household plumbing systems
Fluoride [1025] (ppm)	4	4	A= B=	0.7 0.8	0.7 to 0.8 to 0.8	Nov-14 Oct-14	No No	Water additive which promotes strong teeth
Lead [1030] (ppb) sites exceeding action level 0	AL = 15	0	A=	4 (90 th percentile)	0 to 27	Jul-14	No	Corrosion of household plumbing systems
Nitrate [1040] (ppm)	10	10	A= B=	1.2 1.1	0 to 1.1 to 1.1	Apr-14 Feb-14	No No	Fertilizer runoff; leaching from septic tanks, sewage; erosion of natural deposits
Selenium [1045] (ppb)	50	50	A=	2.8	2.8 to 2.8	Nov-14	No	Discharge from petroleum and metal refineries or mines; erosion of natural deposits
Synthetic Organic Contaminants including Pesticides and Herbicides								
Atrazine [2050] (ppb)	3	3	A= B=	0.25 0.075	BDL to 0.5 BDL to 0.3	May-14 Jul-14	No No	Runoff from herbicide used on row crops
Disinfectants/Disinfection Byproducts and Precursors								
Total Organic Carbon (ppm) (report level=lowest avg. range of monthly ratios)	TT*	N/A	A= B=	1.08 0.94	0.69 to 2.02 0.65 to 1.37	2014 2014	No Yes	Naturally present in environment.
*Monthly ratio is the % TOC removal achieved to the % TOC removal required. Annual average must be 1.00 or greater for compliance.								
Chlorine (ppm)	MRDL = 4	MRDLG = 4	A=	1.00 (highest average)	0.21 to 1.79	2014	No	Water additive used to control microbes.
HAA (ppb) (Stage 2) [Haloacetic acids]	60	N/A	A=	45 (high site average)	19 to 81 (range of individual sites)	2014	No	Byproduct of drinking water disinfection
TTHM (ppb) (Stage 2) [total trihalomethanes]	80	N/A	A=	72 (high site average)	20 to 132 (range of individual sites)	2014	No	Byproduct of drinking water disinfection.

Violation: Total Coliform (Sturgis)

We were issued a violation on 9/5/2014 for exceeding the MCL for Total Coliform during the 7/1/2014 - 7/31/2014 compliance period. This occurred during the time when our treatment plant was shut down. We immediately began flushing the lines to increase the chlorine residual. Eventually we re-opened the treatment plant and have had no issues with chlorine residuals or coliform bacteria. We were back in compliance the following month.

Health Effects:

Total Coliform. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.

Violation: Total Organic Carbon (Morganfield)

Even though TOC is not harmful and has no health effects EPA has mandated that a required percentage be removed each month during treatment processes. We received a violation when our TOC values dropped below required levels in the 4th quarter of 2014. We plan to investigate treatment options that will provide acceptable TOC removal.

Health Effects:

Total organic carbon. Total organic carbon (TOC) has no health effects. However, total organic carbon, provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes, or THMs, and haloacetic acids, or HAAs. Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.